

In the Claims:

Claim 1. (Currently amended) A system for monitoring a patient, comprising:
a vibration sensor for collecting tracheal vibration information from the patient;
~~and~~
a position sensor that changes state depending upon its orientation with respect to the earth's gravity, at least a portion of which is substantially adjacent to a portion of the vibration sensor; and
a housing containing the vibration sensor and the position sensor and adapted to be coupled to the patient.

Claim 2. (Previously presented) The system of claim 1, wherein the vibration sensor comprises a microphone.

Claim 3. (Previously presented) The system of claim 1, wherein the position sensor comprises an accelerometer.

Claims 4-11. (Canceled)

Claim 12. (Currently amended) The system of claim 1, further comprising means for approximately simultaneously coupling at least a portion of the vibration sensor and a portion of the position sensor to a portion of the patient's body, such that the position sensor tracks changes in orientation of the portion of the patient's body to which the system is adapted to be coupled.

Claim 13. (Currently amended) The system of claim 12, wherein the means for approximately simultaneously coupling further comprises means for coupling ~~[[a]]~~ the

housing to the portion of the patient's body ~~containing at least a portion of the vibration sensor and a portion of the position sensor.~~

Claim 14. (Currently amended) The system of claim 13, wherein the means for approximately simultaneously coupling further comprises an adhesive material coupled to a portion of the housing.

Claims 15- 20. (Canceled)

Claim 21. (Currently amended) The system of claim ~~[[19]]~~ 1, ~~wherein the recording means further comprises~~ comprising:

a memory;

~~a power source;~~

a conversion means for receiving the tracheal vibration information ~~and the information indicative of the orientation of the patient's body~~ and converting ~~them~~ it into digital data; and

a means for writing the digital data into the memory.

Claims 22- 24. (Canceled)

Claim 25. (Currently amended) The system of claim 21, further comprising a playback means capable of substantially recreating the collected tracheal vibration information from the ~~recording means~~ digital data written into the memory.

Claims 26-29. (Canceled)

Claim 30. (Currently amended) The system of claim ~~[[13]]~~ 1, further comprising an indicator means on the housing for ~~showing~~ informing a user of the preferred orientation the housing is to have when coupled to the patient's ~~body~~.

Claim 31. (Canceled)

Claim 32. (Currently amended) A method for monitoring a patient, comprising:
coupling ~~to the patient~~ a vibration sensor for collecting tracheal vibration
information from ~~[[a]] the patient~~ to a portion of the patient's body; and
coupling to ~~at least a~~ the portion of the patient's body, ~~substantially adjacent to the~~
~~vibration sensor~~, a position sensor that changes state depending upon its orientation with
respect to gravity, such that the position sensor provides information that is indicative of
the orientation with respect to gravity of the portion of the patient's body to which it is
coupled.

Claims 33- 35. (Canceled)

Claim 36. (Currently amended) The method of claim 32, wherein the step of
coupling ~~[[a]] the~~ vibration sensor further comprises coupling a microphone to the
patient.

Claims 37- 48. (Canceled)

Claim 49. (Currently amended) The method of claim ~~[[34]] 32~~, ~~wherein the step~~
~~of recording data representing the tracheal vibration and orientation information further~~
~~comprises the steps of~~ further comprising:

providing a memory;
converting the tracheal vibration information and information indicative of the
orientation of the portion of the patient's body into digital data; and
writing the digital data into the memory.

Claim 50. (Canceled)

Claim 51. (Previously presented) The method of claim 49, wherein the step of
recording data further comprises the step of:

wirelessly transmitting the tracheal vibration information and information indicative of the orientation of the portion of the patient's body from the sensor to a recording device containing a memory before the step of converting the data into digital data.

Claim 52. (Original) The method of claim 49, wherein the step of recording data further comprises the step of:

wirelessly transmitting the digital data to a recording device containing a memory between the steps of converting the information into digital data and the step of writing the digital data into the memory.

Claim 53. (New) The method of claim 32 where in the portion of the patient's body is peri-tracheal.

Claim 54. (New) The method of claim 53 wherein the portion of the patient's body is the suprasternal notch.

Claim 55. (New) The method of claim 32 wherein the coupling of the vibration sensor to the body of the patient and the coupling of the position sensor to the body of the patient are approximately simultaneous.

Claim 56. (New) The method of claim 32 further comprising
providing a vibration transducer as part of the vibration sensor;
providing an acceleration transducer as part of the position sensor;
coupling the vibration transducer to the portion of the patient's body; and
coupling the acceleration transducer to the portion of the body such that the step of coupling the vibration transducer and the step of coupling the acceleration transducer are simultaneous.

Claim 57. (New) The method of claim 56 wherein the portion of the patient's body is peri-tracheal.

Claim 58. (New) The method of claim 32 further comprising
collecting tracheal vibration information over a period of time with the vibration sensor;

collecting position information over the period of time with the position sensor;
converting the tracheal vibration information into digital data at a sampling rate of at least approximately 2000 hertz and with a resolution of at least 12 bits;
storing the digital data in a non-volatile memory; and
wherein the period of time is at least approximately 6 hours.

Claim 59. (New) The method of claim 32 further comprising
providing an indicator coupled to the position sensor, the indicator indicating a preferred orientation of the position sensor with respect to the patient's body; and
orienting the position sensor with respect to the patient's body as indicated by the indicator.

Claim 60. (New) A system for monitoring a patient, comprising:
a vibration sensor for collecting tracheal vibration information from the patient, the vibration sensor comprising a vibration transducer,
a position sensor that changes state depending upon its orientation with respect to the earth's gravity, the position sensor comprising an acceleration transducer adapted to be coupled to the patient substantially adjacent to the vibration transducer.

Claim 61. (New) The system of claim 60, wherein

the vibration sensor further comprises a first information transmitting means for transmitting information representing the tracheal vibration information; and

the position sensor further comprises a second information transmitting means for transmitting information representing the position of the patient.

Claim 62. (New) The system of claim 61, wherein at least one of the first or second information transmission means further comprises means for electrical transmission of information.

Claim 63. (New) The system of claim 61, wherein at least one of the first or second information transmission means further comprises means for wireless transmission of information.

Claim 64. (New) The system of claim 60 further comprising a housing containing the vibration transducer and the acceleration transducer.

Claim 65. (New) The system of claim 60 further comprising a recording means for recording data representing the tracheal vibration information.

Claim 66. (New) The system of claim 65 further comprising means for converting tracheal vibration information into digital data with a sampling rate of at least approximately 1900 hertz and a resolution of at least 12 bits and means for storing the digital data accumulating during at least a 6 hour time span in a non-volatile memory.

Claim 67. (New) The system of claim 65 further comprising a playback means capable of substantially recreating the collected tracheal vibration information from the data representing the collected tracheal vibration information recorded by the recording means such that upon playback of the data a listener hears at least substantially the same

sound that the listener would have heard through a listening device having a frequency response of at least approximately 400 to 1000 hertz in the same position as the vibration transducer at the time the tracheal vibration information was collected.

Claim 68. (New) The system of claim 60 further comprising means for converting the tracheal vibration information into digital data such that the digital data may be transformed by a playback means into sound that a listener hears as being at least substantially the same sound that the listener would have heard through a listening device having a frequency response of at least approximately 400 to 1000 hertz in the same position as the vibration transducer at the time the tracheal vibration information was collected.

Claim 69. (New) The system of claim 1 wherein the housing is adapted to be coupled to a peri-tracheal portion of the body of the patient.

Claim 70. (New) The system of claim 1 further comprising means for converting the tracheal vibration information into digital data at a sampling rate of at least approximately 2000 hertz and with a resolution of at least 12 bits and

means for storing the digital data accumulating during at least a 6 hour time span in a non-volatile memory.

Claim 71. (New) The system of claim 1 wherein the position sensor is coupled to an axial portion of the body of the patient such that the position sensor provides information indicating that the axial portion of the patient's body is in one of a plurality of pre-defined positions.

Claim 72 (New) The system of claim 71 wherein the plurality of pre-defined positions includes substantially supine, substantially prone, substantially left lateral decubitus, and substantially right lateral decubitus.

Claim 73. (New) The system of claim 1 further comprising means for converting the tracheal vibration information into digital data such that the digital data may be transformed by a playback means into sound that a listener hears as being at least substantially the same sound that the listener would have heard through a stethoscope with its bell placed in the same position as the vibration transducer at the time the tracheal vibration information was collected.